

Appl. No. : 10/799,905
Applicant : Thomas J. O'Keefe, et al.
Filed : March 12, 2004
Title : PROCESS FOR SPONTANEOUS DEPOSITION FROM AN
ORGANIC SOLUTION
TC/A.U. : 1795
Examiner : William T. Leader
Docket No. : 31550-1001

United States Patent Application
DECLARATION

As a below named inventor I hereby declare under penalty of perjury under the laws of the United States of America that the following is true and correct:

1. The process recited in "An Alternative Metallic Seeding Technique for Subsequent Electrochemical Deposition of Copper onto Barrier Metals," by Fang, O'Keefe et al. is a deposition method consisting of the following three separate steps.
 - i. The first step consists of seeding Ti(N) and Ta(N) films that are disposed on a substrate with copper and palladium deposited from an organic solution.
 - ii. The substrate is then physically removed from the organic solution and rinsed with water.
 - iii. The third step consists of placing the rinsed substrate not in the organic bath of step i, but in a completely different type of bath: a standard aqueous electroplating bath, where subsequent electrolytic and electroless copper deposition on the substrate occurs. Therefore, the final deposition step does not occur in a localized range. Additionally, the final step does not occur in a non-conducting solution.
2. Fang, O'Keefe et al. do not disclose the deposition process of the present invention, which never uses electrolytic or electroless deposition from an aqueous electroplating bath. The present invention teaches a deposition method using only a non-aqueous, non-conducting organic solution, comprising the following steps, in part:
 - i. Contacting the substrate with a non-aqueous, non-conducting organic solution and depositing seeds in a localized range on the active substrate.
 - ii. Continuing depositing in a localized range the desired deposition galvanic coating component from the non-aqueous, non-conducting organic solution onto the active substrate.

Signature: Matthew J. O'Keefe
Matthew J. O'Keefe

Executed on Date: 21 Dec 09